SITE ASSESSMENT REPORT
FOR
THE MASTER METALS INC. SITE
CLEVELAND, CUYAHOGA COUNTY, OHIO
TDD: T05-9206-022
PAN: EOH0969SAA
TAT-05-23-02040

AUGUST 13, 1992

Prepared for:

Duane Heaton
Deputy Project Officer
Emergency Support Section
EPA - Region V

Contract Number: 68-WO-0037

Prepared by: Peter Lin — Date: 13 August 1992
Reviewed by: Sandra L. Basham — Date: 13 August 1992
Approved by: Anna A. Butler — Date: 14 August 1992

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International Specialists in the Environment

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1.0 INTRODUCTION

The Ecology & Environment, Inc., Technical Assistance Team (TAT) was tasked by the United States Environmental Protection Agency (U.S. EPA) to conduct a site assessment and hazard evaluation at the Master Metals, Inc., site, Cleveland, Cuyahoga County, Ohio, under TDD# T05-9206-022 issued June 22, 1992. Tasks to be accomplished under this TDD included preparation of a site Health and Safety Plan, review of background information, on-site air monitoring, photodocumentation of site activities, preparation of a sampling plan, collection of samples, and determination of the existence of a threat to human health and the environment. Upon request of U.S. EPA On-Scene Coordinator (OSC) Len Zintak, TAT conducted a site assessment and collected samples on July 14, 1992.

2.0 SITE BACKGROUND

2.1 Site Description

The Master Metals, Inc., site is located at 2850 West Third Street, Cleveland, Cuyahoga County, Ohio. The site consists of two contiguous parcels totaling approximately 4.3 acres (Figure 1). The property is roughly right triangle-shaped with the southeast corner being the 90 degree angle. The site is bounded on the northwest by rail yards owned by the Baltimore and Ohio Railroad, on the south by a dead end road, and on the east by West Third Street (Figure 2). The site is enclosed by a 10-foot chain link fence. The eastern section of the fence has two gates. The southern-most gate is kept locked and access through the motorized north gate is controlled by a Master Metals, Inc., employee. The site is located in a heavily industrialized area. LTV Steel owns the property to the north and south of the site, while residential housing is located approximately 0.5 miles northwest of the site.

The Cuyahoga River is located approximately 0.5 miles east of the site and flows northward to empty into Lake Erie. Observed site topography and a topographic map of the area suggest that the direction of ground water and surface water flow at the Master Metals facility would be northeast toward the Cuyahoga River. Data collected from soil borings Compliance Technologies, Inc. (CTI), 1991) indicated that the water table is at a depth of about 10 feet below the ground surface. Surface soil consists of natural soil developed on either glacial till or river alluvium, and fill material. The fill consists mainly of cinders and slag.

The major features of the site include: the office building, the furnace building, a storage building, and a lead alloying operation building called the white metal building. The facility also has two baghouses for the furnaces and a secondary large brick baghouse, a shipping and receiving building, a battery cracking area in the facility yard, a batch wastewater pretreatment system,

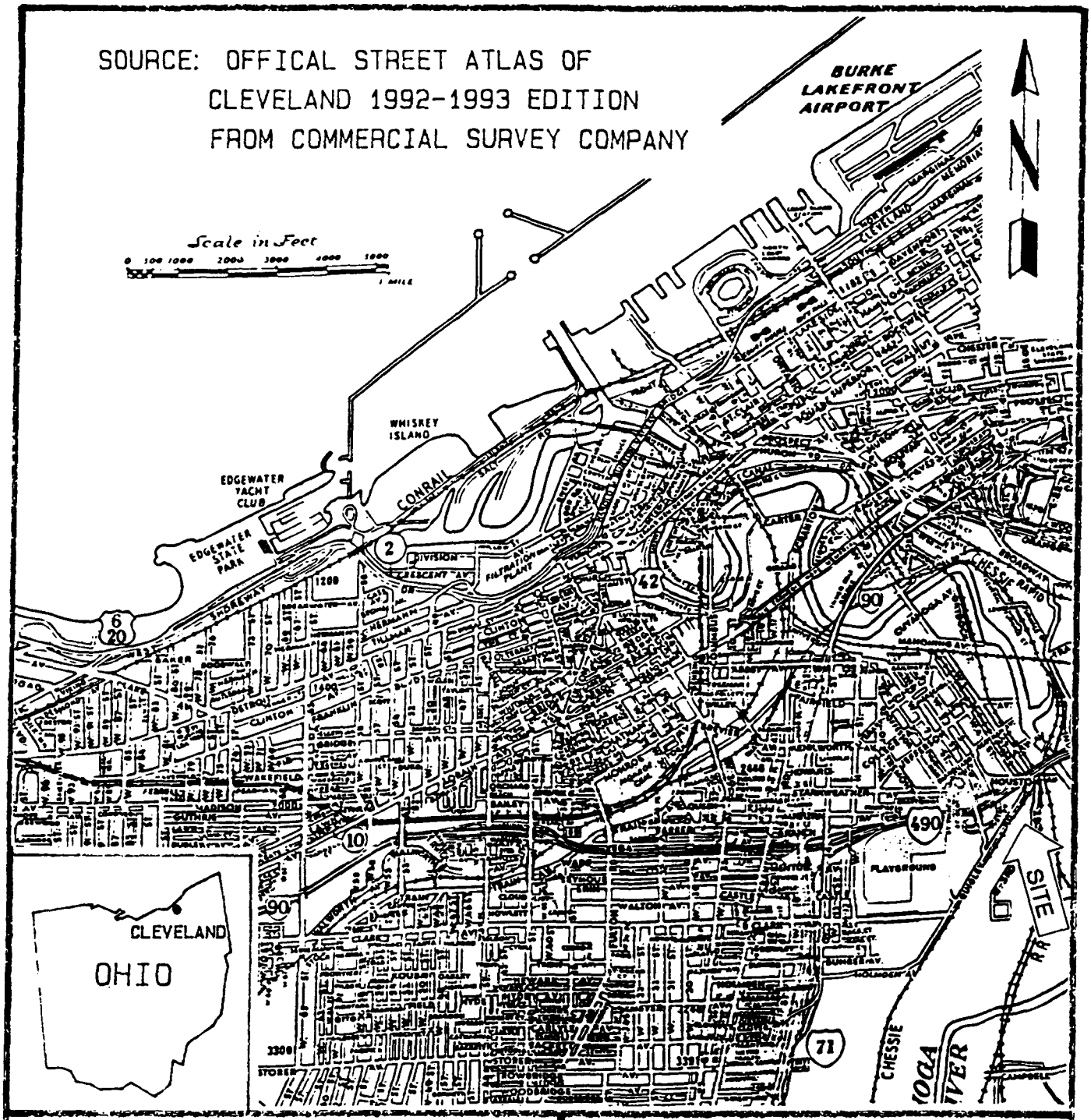

FIGURE 1

SITE LOCATION MAP

MASTER METALS INC.

CLEVELAND, OHIO

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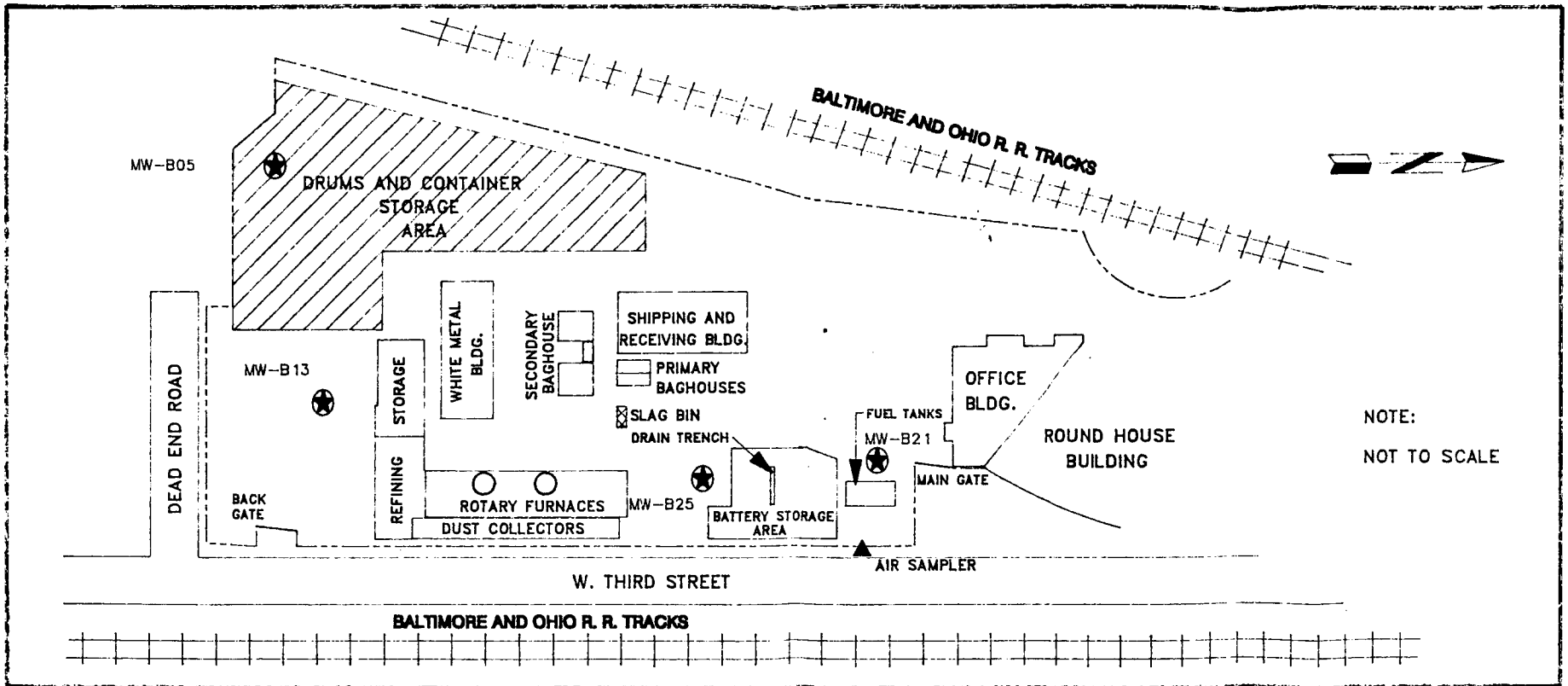
APPROVED BY S. L. BASHAM	DATE 07/16/92	TDD # T05-9206-022



LEGEND

- R. R. TRACKS
- FENCE
- AIR SAMPLER
- MONITORING WELL

FIGURE 2
SITE FEATURES
MASTER METALS INC.
CLEVELAND, OHIO

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and bulk and drum storage areas. Several hundred drums and containers labeled "Hazardous Waste" are located in the drum and container storage areas (Figure 2).

2.2 Site History

Master Metals, Inc., is a secondary lead smelting facility that produces lead alloys from lead-bearing dross, spent industrial batteries, and various other lead scrap materials. In addition, Master Metals recycles flue dust and captured baghouse emissions from its furnace operation. The plant was constructed by the National Lead Company in 1932. The National Lead Company operated a secondary lead smelter on the property from 1932 until Master Metals, Inc., purchased the plant in 1979. The present owner of the plant is Mr. Douglas Mickey.

On November 19, 1980, Master Metals, Inc., obtained "interim status" to operate certain of the facility's waste piles and treatment units, and a containerized storage area, in the manner set forth in Part A of the RCRA permit application for the facility. On November 8, 1985, the hazardous waste piles that contained lead-bearing dusts (D008 and K069) at the facility lost interim status for failure to certify compliance with financial requirements of 40 CFR 265, Subpart H. These units, termed the Closing Hazardous Waste units, are the subject of the Partial Closure Plan. The other hazardous waste units, termed the Operating Hazardous Waste Units, are the subject of the Final Facility Closure Plan. On the behalf of the U. S. EPA, the U. S. Department of Justice filed a complaint for violations of RCRA on June 15, 1987, in the United States Bankruptcy Court for the Northern District of Ohio seeking Closure of the D008/K069 waste piles and compliance with financial responsibility requirements. Master Metals, Inc., entered into a Consent Decree with the U. S. EPA for the closure of the waste piles on January 16, 1990. The facility has submitted both a Partial and a Final Facility Closure Plan to the U.S. EPA. At the time of this report, waste pile closure had not been completed.

During 1989, the Ohio Environmental Protection Agency (OEPA) issued an order that cited Master Metals, Inc., for emitting smoke from one of its furnace that exceeded the regulatory limit of 10% opacity and for emitting excessive fugitive dust from both furnaces. The order required the facility to implement new controls to reduce its emission of particulates and lead. On March 26 and 27, 1990, Mr. Mark Bergman of the OEPA conducted a hazardous waste inspection of the Master Metals, Inc., site. The facility was inspected for compliance with Ohio Hazardous Waste Regulations. The OEPA's inspection report identified seven violations. Thirty-one violations were identified when the OEPA conducted their most recent waste inspection on August 9, 12 and 16, 1991.

In December, 1990, Master Metals contracted CTI to install

four groundwater monitoring wells on the site. The wells are located in or near hazardous waste storage and handling areas (Figure 2). In February, 1991, CTI collected groundwater samples from the monitoring wells. The analytical results of the groundwater samples from each of the four wells indicated that the concentrations of lead and cadmium exceeded the Ohio maximum contaminant levels (MCL) for inorganic chemicals in public drinking water supplies (Appendix D). CTI collected samples from 30 soil borings that were made in various locations throughout the site. The samples were analyzed for pH and total metals concentrations. A sample (B27) collected from a depth of 1 foot beneath the surface in the battery cracking area, contained 14,070 mg/kg of total lead (Figure 3 and Appendix D). The results of the sample analyses indicated that the soil in the southern portion of the site, the drum storage area, contained concentrations of lead exceeding 10,000 mg/kg (B10 and B11 in Figure 3). The contamination extended to a depth of up to 10 feet below grade.

In January, 1992, three ambient air lead monitors were installed near the Master Metals, Inc., facility. The Hi-Vol monitors filter a 24-hour sample of ambient air. The monitors, operated by the Cleveland Division of Air Pollution Control, are set to operate every sixth day. The sample filter is chemically analyzed for the concentration of lead in the dust collected during that 24-hour period. Monthly averages of lead concentration are listed in Appendix E. A quarterly average of 18 micrograms of lead per cubic meter of air was calculated from the laboratory results for January, February, and March, 1992. This concentration is well above the National Ambient Air Quality Standard (NAAQS) of 1.5 micrograms of lead per cubic meter of air for a calendar quarter average.

On August 3, 1992, OEPA ordered Master Metals, Inc., to immediately shut down its lead-smelting operations because of "health-threatening" violations of air standards. Master Metals agreed to this closing, as it faced a deadline from OEPA and a hearing in Cleveland Municipal Court.

3.0 SITE ACTIVITIES

3.1 Informational Review

U.S. EPA OSC Len Zintak provided the TAT with copies of reports that had been prepared for the Master Metals facility by outside contractors. They included "Environmental Risk Assessment Final Report for Master Metals, Inc." prepared by the Environmental Strategies Corporation on February 15, 1991, and "Subsurface Investigation Report for Master Metals, Inc." prepared by the Compliance Technologies, Inc., in January, 1991. The TAT also reviewed reports and analytical data provided by the OEPA.

3.2 Site Reconnaissance

On July 14, 1992, TAT Members Sandra Basham and Peter Liu met U.S EPA OSC Zintak at the Master Metals, Inc., site to conduct a site inspection. OSC Zintak conducted a meeting with the Master Metals, Inc., representative Robert B. Casarona (Attorney at Law, Climaco, Climaco, Seminatore, Lefkowitz & Garofoli Co., L.P.A.). Also present at the meeting were OEPA representatives Paul Anderson, Linda Lagunzad, Sig Williams and Tom Roth, Cleveland City of Air Pollution Control technician George Young, Northeast Ohio Regional Sewer District representatives Cheryl A. Green and Larry Adloff, and TAT members Sandra Basham and Peter Liu. During the meeting, OSC Zintak briefed Mr. Casarona on details of the site inspection and the collection of samples to be caried out by the TAT. The facility operations were also discussed during the meeting. Robert Casarona informed OSC Zintak that the installation of a new wastewater treatment system for stormwater runoff and battery cracking wastewaters is scheduled to be completed during the summer of 1992.

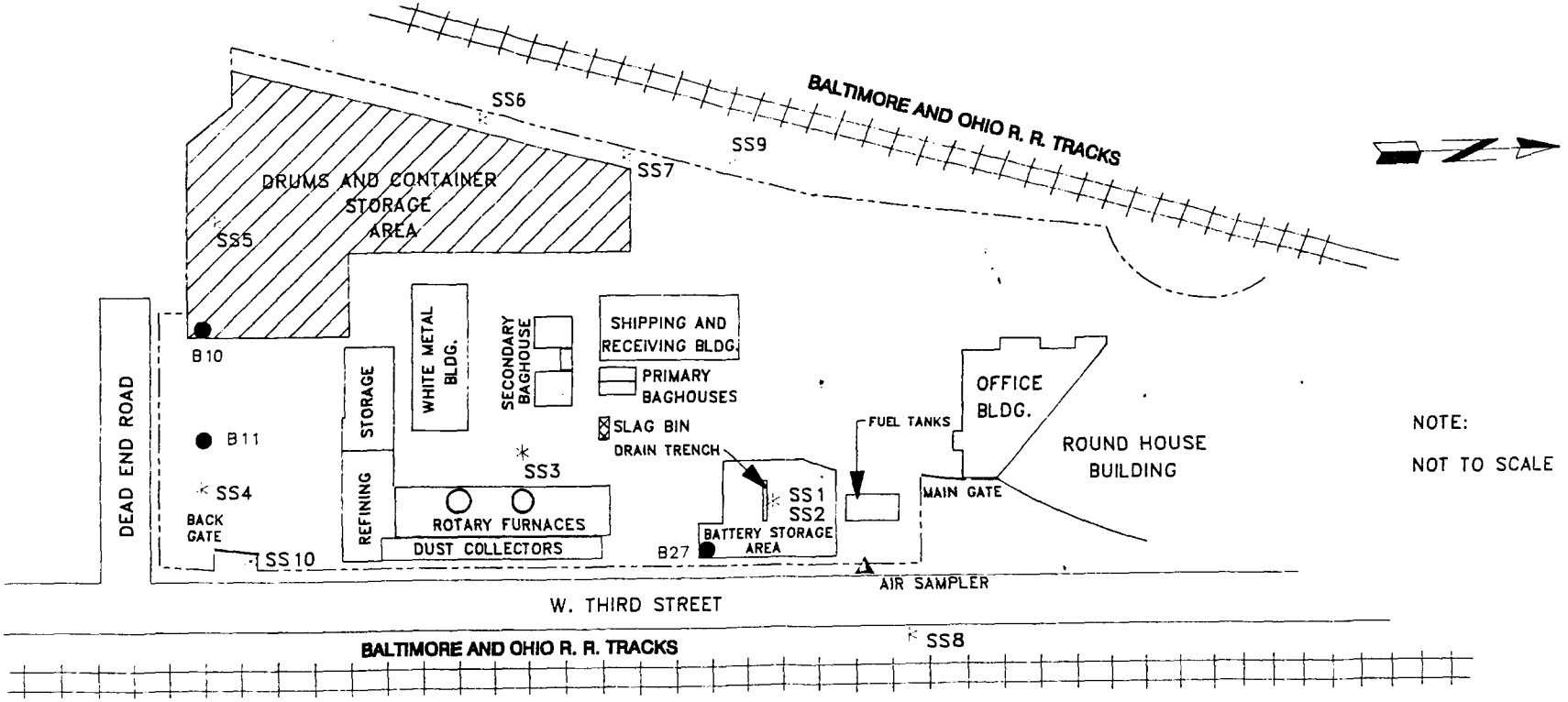
After the meeting, all attendees entered the property in level "C" protection. During the initial walk-through, air monitoring instruments were not utilized because the facility is an operational facility with known hazards, and the pre-existing data indicated the main hazard to be particulate lead. No battery-cracking or smelting occurred during the site visit. According to Mr. Casarona, the facility was temporarily shut down due to extreme temperatures and difficult working conditions.

During the initial reconnaissance, the TAT marked potential sample collection points. The TAT observed lead debris littering the concrete floor near the rotary furnaces. About 10 drums labeled "Hazardous Waste" and "Salvage Drum" and several pallets of lead ingots were observed in the white metal building. Several hundred 55 gallon drums were staged in the drum storage area. The solder dross, scrap lead, and other lead-containing materials were stored in drums labeled "Hazardous Waste." Other drums bearing "Non Hazardous Waste" labels were also placed in the drum storage area. Water had collected in a low lying area between the two groups of drums.

Site photographs are presented in Appendix A. After completion of the initial site reconnaissance, TAT members and the OSC left the hot zone to discuss observations and to finalize the selection of sample collection points.

3.3 Sampling Activities

To assist in determining the presence of surface soil contamination that might be subject to airborne transport off-site, OSC Zintak requested that TAT collect seven grab samples of surface soil. The location of all sample points is documented on Figure 3.



LEGEND

- R. R. TRACKS
- SAMPLING LOCATION
- FENCE
- AIR SAMPLER
- CTI SAMPLING LOCATION

FIGURE 3

SAMPLE LOCATIONS

MASTER METALS INC.

CLEVELAND, OHIO

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DRAWN BY P. LIU	DATE 07 - 16 - 92	PAN# E0H0969SAA
APPROVED BY S. L. BASHAM	DATE 07 - 16 - 92	TDD # T05-9206-022

Grab samples SS1 and SS2 were collected from sediment deposited in the trench drain in the battery cracking area. SS2 was to serve as a field duplicate of SS1. Sample SS3 was collected from the surface of the yard between the rotary furnaces and the slag bin. Sample SS4 was collected from the southeast corner of the cleared dirt area located near the south gate of the facility. Sample SS5 was collected from sediment deposited in a low lying water-filled area in the drum and container storage area. Sample SS6 was collected from soil in a grassy area between the railroad tracks and the embankment near the fence on the western side of the facility. Sample SS7 was collected from the northeast corner of the drum storage area near the fence.

In order to determine whether contaminants had migrated off site, the OSC also requested that TAT collect three additional samples of surface soil from areas outside the facility fence. Grab sample SS8 was collected from the east side of West Third Street opposite the Hi-Vol air sampler. Sample SS9 was collected from a grassy area in the rail yard to the west of the property fence. Sample SS10 was collected from the surface soil near the storm sewer located adjacent to the southern gate. The location of all off-site sample points is also documented in Figure 3.

All samples were collected with a dedicated metal or plastic trowel. The outermost layer of sample gloves was removed and fresh gloves donned between sample points. Each sample was homogenized in place then placed directly into two 8 ounce sample jars. TAT provided one of the 8 ounce jars to the site representative as a sample split.

All samples were labeled, stored at approximately 4° Celcius, and placed in a locked room overnight. A representative of American Environmental Laboratories, Bedford, Ohio, assumed custody of the samples the morning of July 15, 1992. All of samples were to be analyzed for RCRA Metals and TCLP Metals. Sample SS1 was also to be analyzed for pH.

4.0 ANALYTICAL RESULTS

All samples were analyzed for RCRA Metals and TCLP Metals. Sample analyses results showed that TCLP lead is present at concentrations of more than 200 times the regulatory level (5 mg/L) for all location points, with the exception of samples SS4, and SS8 (see Table 1 provided in Appendix B). Sample SS3 indicated the presence of TCLP arsenic at 29 mg/L and TCLP cadmium at 32 mg/L. Sample SS6 also revealed the presence of TCLP arsenic at 8.10 mg/L and TCLP cadmium at 8.14 mg/L. The TCLP regulatory level is 5 mg/L for arsenic, and 1 mg/L for cadmium. RCRA lead is also present at high concentrations for all location points. The highest concentration of RCRA lead is 115,000 ppm for sample SS1. The average background lead concentration ranges between 9 ppm and 39

ppm in Ohio farm soil (T. J. Logan and R. H. Miller, 1983). Values greater than two or three times the mean background levels should be considered indicative of lead contamination.

5.0 DISCUSSION OF POTENTIAL THREATS

Soil sampled at and around the Master Metals site exceeded the regulatory limits for TCLP lead. Six of ten samples exceeded the limit for TCLP cadmium, and two samples exhibited a high level of TCLP arsenic. The conditions present at the site that may constitute a threat to public health and welfare or the environment based upon the considerations as set forth in the National Contingency Plan (NCP), 40 CFR Section 300.415 (b) (2) and may, therefore, justify that a removal action be conducted at this site include, but are not limited to, the following:

- Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

The Master Metals site is bounded on the east by West 3rd Street, a road with a great deal of industry-related traffic. Employees of the surrounding businesses use the road daily and pass within feet of the site. The site is also located approximately one half mile from the nearest residence, and two miles from downtown Cleveland. The existence of contaminated soil, groundwater, ambient air, and the potential for migration of hazardous substances off the facility makes the exposure of the surrounding populations and environment likely.

As the site is in the drainage basin of the Cuyahoga River, there is a possibility for lead contamination to reach the river. The Cuyahoga is extensively utilized for transportation and recreational purposes. Swimmers and boaters could come into contact with the contaminants of concern. The Cuyahoga drains to Lake Erie, which is heavily used for recreational boating and fishing. The possibility exists that lead from the Master Metals site could bioaccumulate in the lake fish, posing a threat to humans and animals that catch and consume the fish.

- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that migrate;

The following is a list of chemical contaminants of potential concern at the Master Metals site. These contaminants were present in high concentrations in soil samples collected at the site.

Arsenic - a potential skin and lung carcinogen via contact, inhalation and ingestion routes of exposure. Acute exposures to dust or mist may cause coughing and irritation to the eyes.

Cadmium - a potential carcinogen via inhalation and ingestion routes of exposure. It is an irritant to the respiratory tract.

Lead - a toxic non-carcinogen via inhalation, ingestion, eye and dermal routes of exposure. Lead poisoning can cause kidney, neurological and reproductive damage in adults. Children with excessive exposure are at risk for learning disabilities and neurological and kidney damage.

These contaminants, being present in the surface soils are likely to be transported off-site by wind, and heavy equipment.

- o Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

Northeast Ohio has extremely heavy rainstorms in the summer, and heavy snow in the winter. The potential for surface run-off from the contaminated areas to the surrounding property exists during heavy precipitation events. There is also a potential for contaminant migration into the groundwater and Cuyahoga River. During dry weather, the likelihood of contaminated dust being transported off-site due to site activities and traffic is high.

6.0 SUMMARY

The following conclusions can be drawn from historical site information, TAT site observations, and analytical results:

- o On-site operations agitate contaminated dust causing particulates to be airborne. These particulates spread to off-site areas.

- o The on-site contamination has apparently spread to off-site areas. A potential does exist for the public to come into contact with the contaminated hazardous soils that surround the site.

- o Lead concentrations in the ambient air at and near the Master Metals site is well above the regulatory limit of 1.5 micrograms of lead per cubic meter of air. This lead pollution could adversely impact surrounding populations.

- o High lead concentrations in groundwater and deeper soil samples indicate the possibility that the groundwater has been contaminated.

APPENDIX A

SITE PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: MASTER METALS INC. PAGE: 1 OF 8

U.S. EPA ID: TDD: T059206022 PAN: EOH0969SAA

DATE:07/09/92

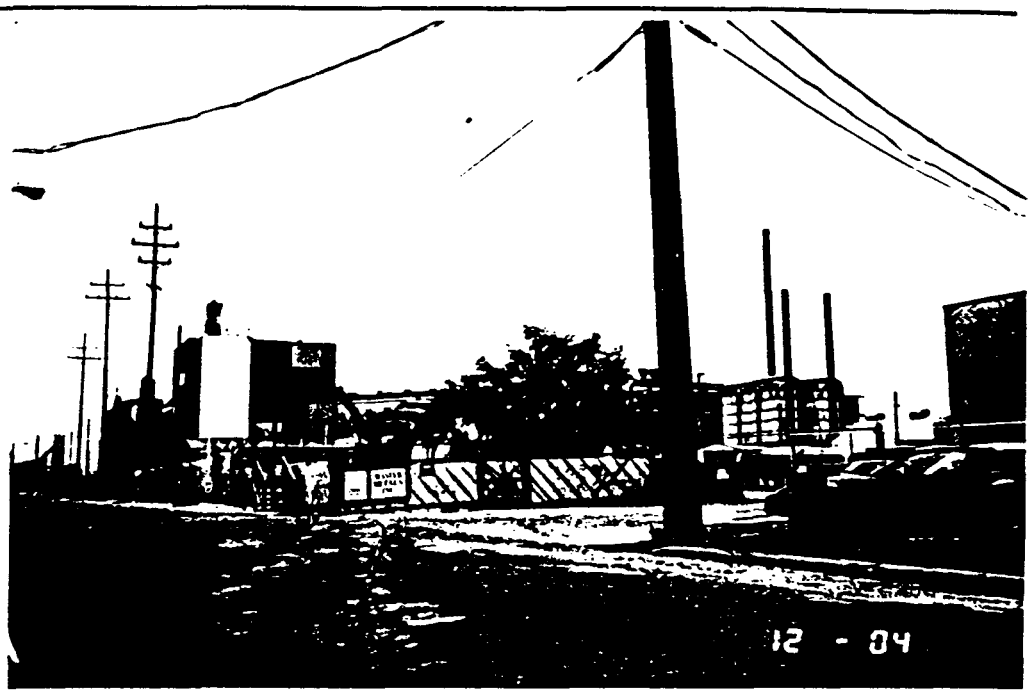
TIME:12:04

DIRECTION OF PHOTO. :
SOUTHWEST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
SANDRA BASHAM

SAMPLE ID (if applicable):



DESCRIPTION: PERSPECTIVE VIEW SHOWING THE MASTER METALS INC. SITE.

DATE:07/09/92

TIME:12:05

DIRECTION OF PHOTO. :
EAST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
SANDRA BASHAM

SAMPLE ID (if applicable):

DESCRIPTION: PERSPECTIVE VIEW SHOWING ONE OF TWO FURNACES.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: MASTER METALS INC. PAGE: 2 OF 8

U.S. EPA ID: TDD: T059206022 PAN: EOH0969SAA

DATE:07/09/92

TIME:12:10

DIRECTION OF PHOTO. :
NORTH

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
SANDRA BASHAM

SAMPLE ID (if applicable):

DESCRIPTION: PERSPECTIVE VIEW SHOWING THE DRUM AND CONTAINER STORAGE AREA.

DATE:07/14/92

TIME:13:30

DIRECTION OF PHOTO. :
EAST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):

DESCRIPTION: CLOSE-UP PHOTOGRAPH SHOWING LEAD DEBRIS LITTERING THE CONCRETE FLOOR NEAR THE ROTARY FURNACES.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: MASTER METALS INC. PAGE: 3 OF 8

U.S. EPA ID: TDD: T059206022 PAN: EQH0969SAA

DATE:07/14/92

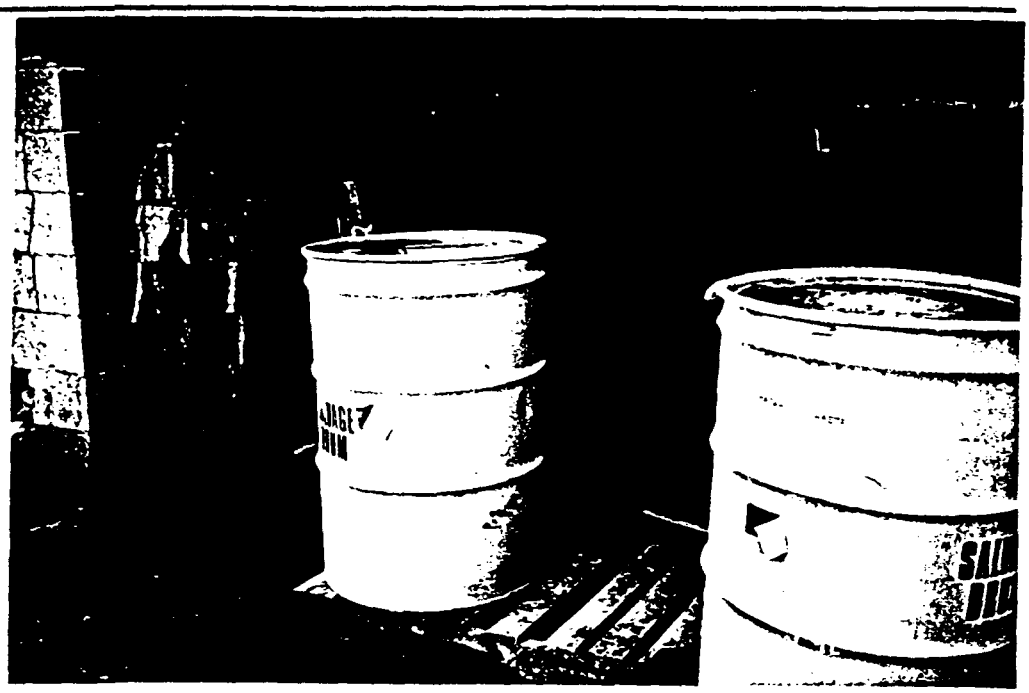
TIME:13:32

DIRECTION OF PHOTO. :
SOUTH

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):



DESCRIPTION: CLOSE-UP PHOTOGRAPH SHOWING DRUMS LABELED "HAZARDOUS WASTE" AND "SALVAGE DRUM" IN THE WHITE METAL BUILDING.

DATE:07/14/92

TIME:13:38

DIRECTION OF PHOTO. :
SOUTH

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):

DESCRIPTION: VIEW SHOWING PALLETS OF LEAD INGOTS IN THE WHITE METAL BUILDING.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: MASTER METALS INC. PAGE: 4 OF 8

U.S. EPA ID: TDD: T059206022 PAN: EOH0969SAA

DATE:07/14/92

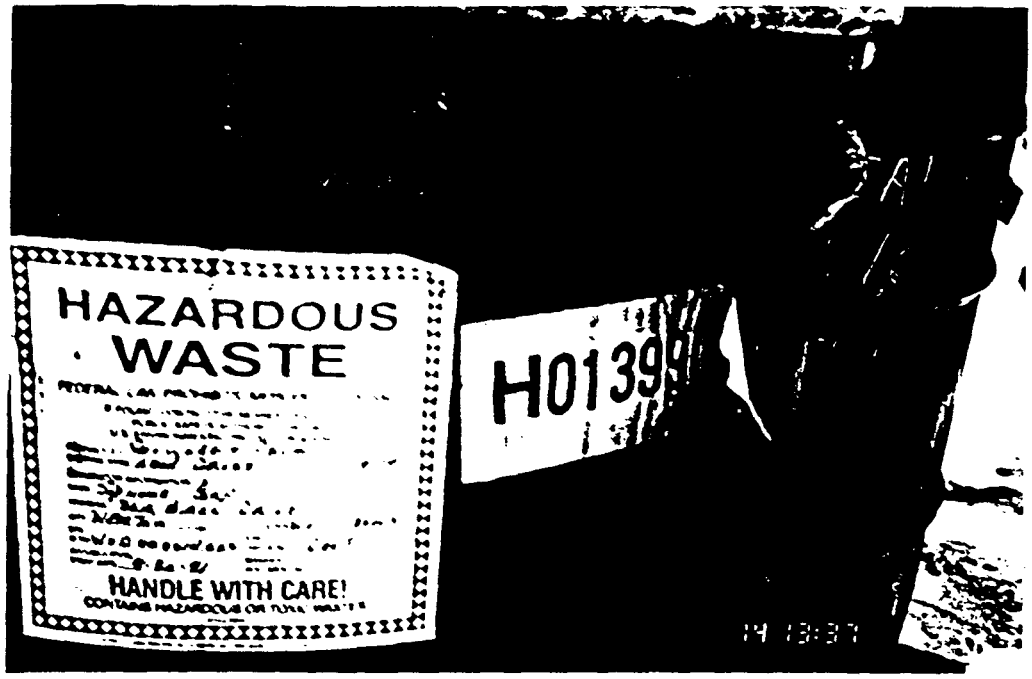
TIME:13:36

DIRECTION OF PHOTO. :
WEST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):



DESCRIPTION: CLOSE-UP PHOTOGRAPH SHOWING DRUMS LABELED "HAZARDOUS WASTE" LOCATED IN THE DRUM AND CONTAINER AREA.

DATE:07/14/92

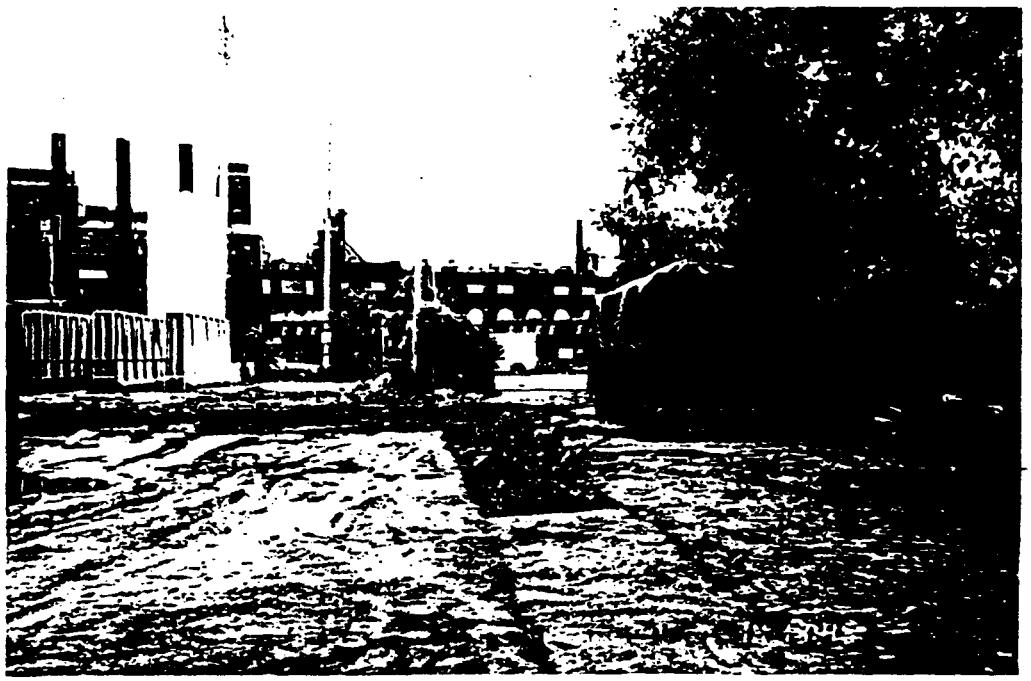
TIME:13:45

DIRECTION OF PHOTO. :
EAST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):



DESCRIPTION: PERSPECTIVE VIEW SHOWING THE SOUTHEAST CORNER OF CLEARED DIRT AREA.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: MASTER METALS INC. PAGE: 5 OF 8

U.S. EPA ID: TDD: T059206022 PAN: EQH0969SAA

DATE: 07/14/92

TIME: 14:27

DIRECTION OF PHOTO. :
NORTHWEST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):
SS1 + SS2

DESCRIPTION: CLOSE-UP PHOTOGRAPH SHOWING LOCATION OF SAMPLE SS1 AND SS2 IN THE BATTERY STORAGE AREA.

DATE: 07/14/92

TIME: 14:58

DIRECTION OF PHOTO. :
EAST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):
SS3

DESCRIPTION: CLOSE-UP VIEW SHOWING LOCATION OF SAMPLE SS3 COLLECTED FROM SURFACE OF THE YARD BETWEEN THE ROTARY FURNACES AND SLAG BIN.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: MASTER METALS INC. PAGE: 6 OF 8

U.S. EPA ID: TDD: T059206022 PAN: EOH0969SAA

DATE:07/14/92

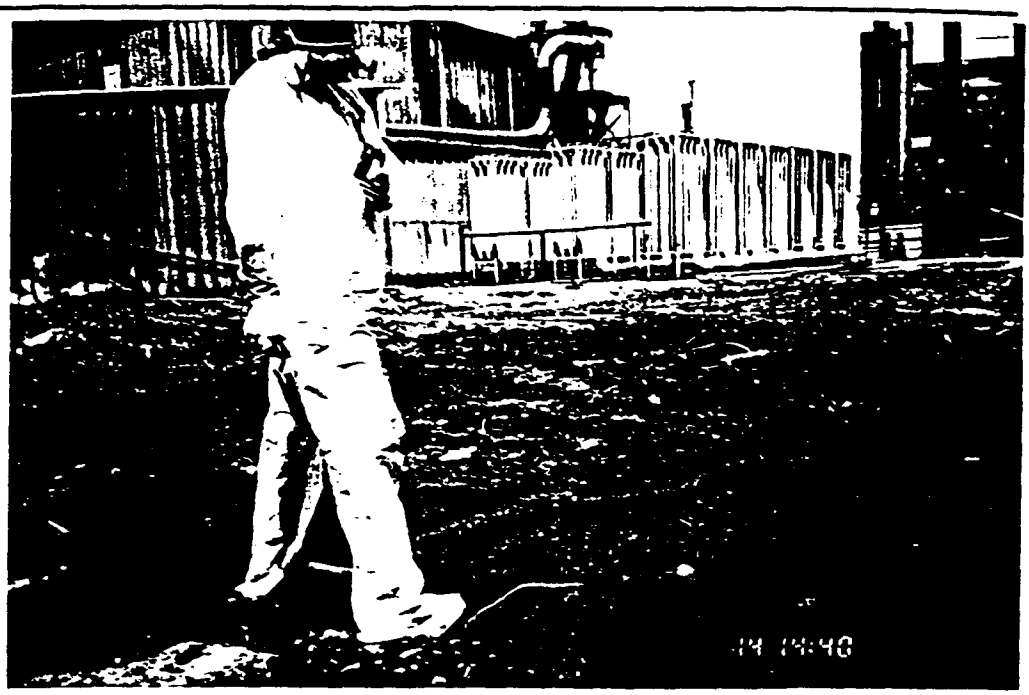
TIME:14:40

DIRECTION OF PHOTO. :
NORTHEAST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):
SS4



DESCRIPTION: CLOSE-UP VIEW SHOWING LOCATION OF SAMPLE SS4 COLLECTED FROM THE SOUTHEAST CORNER OF CLEARED DIRT AREA.

DATE:07/14/92

TIME:14:47

DIRECTION OF PHOTO. :
NORTH

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):
SS5

DESCRIPTION: CLOSED-UP VIEW SHOWING LOCATION OF SAMPLE SS5 COLLECTED FROM SEDIMENT DEPOSITED IN THE LOW LYING AREA IN THE THE DRUM STORAGE AREA.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: MASTER METALS INC. PAGE: 7 OF 8

U.S. EPA ID: TDD: T059206022 PAN: EOH0969SAA

DATE:07/14/92

TIME:14:52

DIRECTION OF PHOTO. :
NORTHEAST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):
SS6

DESCRIPTION: CLOSE-UP VIEW SHOWING LOCATION OF SAMPLE SS6 BETWEEN THE RAILROAD TRACK AND THE EMBANKMENT NEAR THE WESTERN PROPERTY FENCE.

DATE:07/14/92

TIME:15:24

DIRECTION OF PHOTO. :
SOUTHWEST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):
SS8

DESCRIPTION: CLOSE-UP VIEW SHOWING LOCATION OF SAMPLE SS8 COLLECTED FROM THE EAST SIDE OF WEST THIRD STREET.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: MASTER METALS INC. PAGE: 8 OF 8

U.S. EPA ID: TDD: T059206022 PAN: EOH0969SAA

DATE: 07/14/92

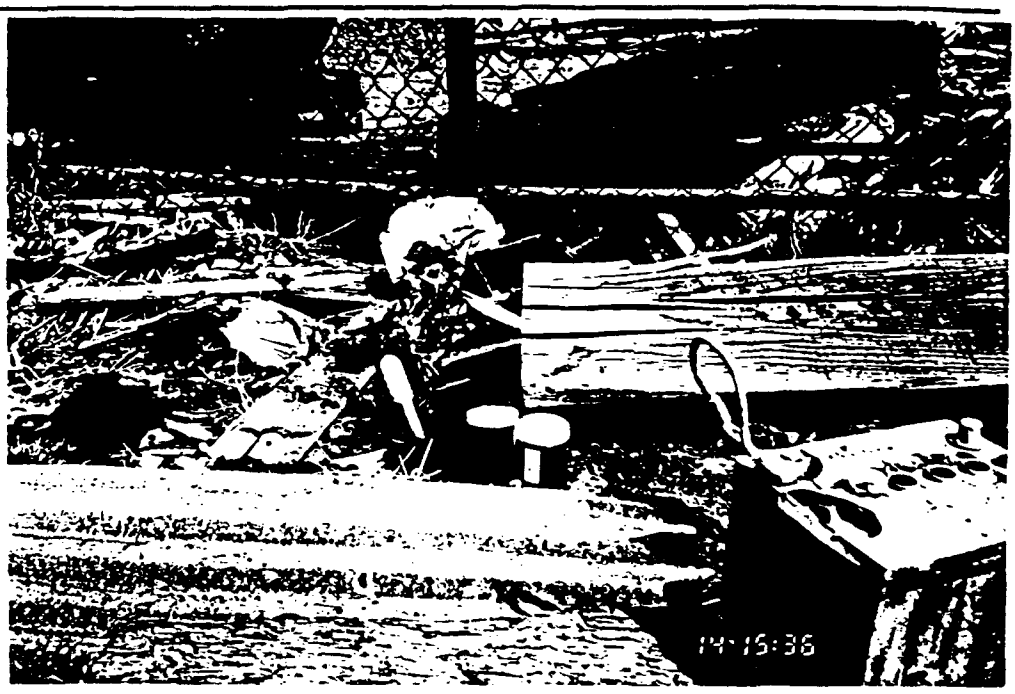
TIME: 15:36

DIRECTION OF PHOTO. :
EAST

WEATHER CONDITIONS:
SUNNY TEMP. 85 F

PHOTOGRAPHED BY:
PETER LIU

SAMPLE ID (if applicable):
SS9



DESCRIPTION: CLOSE-UP VIEW SHOWING LOCATION OF SAMPLE SS9 IN THE RAILROAD YARD OUTSIDE THE WESTERN PROPERTY FENCE.

DATE:

TIME:

DIRECTION OF PHOTO. :

WEATHER CONDITIONS:

PHOTOGRAPHED BY:

SAMPLE ID (if applicable):

DESCRIPTION:

APPENDIX B

TABLES 1 AND 2
CHEMICAL ANALYSIS RESULTS

APPENDIX C

LABORATORY DATA SHEETS

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACTION DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	551 Trench Drain North	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2510

TCLP METALS

EPA HAZ #	ELEMENT	RESULT mg/L	DETECTION LIMIT mg/L	REGULATORY LEVEL mg/L	DATE ANALYZED
D004	Arsenic	1.77	0.05	5.0	7/22/92
D005	Barium	0.83	0.05	100.0	7/20/92
D006	Cadmium	1.96	0.02	1.0	7/21/92
D007	Chromium	BDL	0.02	5.0	7/20/92
D008	Lead	1230	0.05	5.0	7/20/92
D009	Mercury	BDL	0.02	0.2	7/21/92
D010	Selenium	BDL	1.0	1.0	7/23/92
D011	Silver	BDL	0.05	5.0	7/21/92

BDL = Below Detection Limit

EPA Method SW846 6010
Mercury Method SW846 7470
EPA SW846 1311

INORGANIC ANALYSIS

PARAMETER	RESULT	DETECTION LIMIT	METHOD	DATE ANALYZED
pH	8.29	----	SW846 9045	7/20/92

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACT DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	551 Trench Drain North	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2510

TOTAL METALS
SW846 6010

Element	Result ppm	Detection Limit	Date Analyzed
Arsenic	68.0	0.10	7/22/92
Barium	1400	0.10	7/20/92
Cadmium	170	0.05	7/21/92
Chromium	156	0.05	7/20/92
Lead	115000	0.10	7/20/92
Mercury	1.00	0.02	7/17/92
Selenium	BDL	5.0	7/23/92
Silver	BDL	0.10	7/21/92

BDL = Below Detection Limit

ANALYSIS CERTIFIED BY

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER: Ecology & Environment

GENERATOR:

SAMPLE ID: 551

DATE RECEIVED: 7/15/92

DATE REPORTED: 7/20/92

LABORATORY ID: 2510

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FUELS ANALYSIS

PARAMETER	METHOD	RESULT	DATE ANALYZED
% Moisture	ASTM D1037	24.5	7/20/91

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACTION DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	552 Trench Drain South	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2511

TCLP METALS

EPA HAZ #	ELEMENT	RESULT mg/L	DETECTION LIMIT mg/L	REGULATORY LEVEL mg/L	DATE ANALYZED
D004	Arsenic	1.00	0.05	5.0	7/22/92
D005	Barium	0.78	0.05	100.0	7/20/92
D006	Cadmium	1.91	0.02	1.0	7/21/92
D007	Chromium	0.11	0.02	5.0	7/20/92
D008	Lead	1040	0.05	5.0	7/20/92
D009	Mercury	BDL	0.02	0.2	7/21/92
D010	Selenium	BDL	1.0	1.0	7/23/92
D011	Silver	BDL	0.05	5.0	7/21/92

BDL = Below Detection Limit

EPA Method SW846 6010
Mercury Method SW846 7470
EPA SW846 1311

ANALYSIS CERTIFIED BY: _____
Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACT DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	552 Trench Drain South	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2511

TOTAL METALS
SW846 6010

Element	Result ~~ppm~~ mg/kg 4.31.92	Detection Limit	Date Analyzed
Arsenic	58.0	0.10	7/22/92
Barium	107	0.10	7/20/92
Cadmium	72.0	0.05	7/21/92
Chromium	175	0.05	7/20/92
Lead	8610	0.10	7/20/92
Mercury	1.27	0.02	7/17/92
Selenium	BDL	5.0	7/23/92
Silver	BDL	0.10	7/21/92

BDL = Below Detection Limit

ANALYSIS CERTIFIED BY _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER: Ecology & Environment

GENERATOR:

SAMPLE ID: 552

DATE RECEIVED: 7/15/92

DATE REPORTED: 7/20/92

LABORATORY ID: 2511

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FUELS ANALYSIS

PARAMETER	METHOD	RESULT	DATE ANALYZED
% Moisture	ASTM D1037	24.9	7/20/91

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACTION DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	553 In Front of Foundary	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2512

TCLP METALS

EPA HAZ #	ELEMENT	RESULT mg/L	DETECTION LIMIT mg/L	REGULATORY LEVEL mg/L	DATE ANALYZED
D004	Arsenic	29.0	0.05	5.0	7/22/92
D005	Barium	3.00	0.05	100.0	7/20/92
D006	Cadmium	32.0	0.02	1.0	7/21/92
D007	Chromium	BDL	0.02	5.0	7/20/92
D008	Lead	1220	0.05	5.0	7/20/92
D009	Mercury	BDL	0.02	0.2	7/21/92
D010	Selenium	BDL	1.0	1.0	7/23/92
D011	Silver	BDL	0.05	5.0	7/21/92

BDL = Below Detection Limit

EPA Method SW846 6010
Mercury Method SW846 7470
EPA SW846 1311

ANALYSIS CERTIFIED BY: Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACT DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	553 In Front of Foundary	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2512

TOTAL METALS
SW846 6010

Element	Result ~~ppm~~ mg/Kg 7.31.92	Detection Limit	Date Analyzed
Arsenic	870	0.10	7/22/92
Barium	420	0.10	7/20/92
Cadmium	920	0.05	7/21/92
Chromium	190	0.05	7/20/92
Lead	98000	0.10	7/20/92
Mercury	0.98	0.02	7/17/92
Selenium	BDL	5.0	7/23/92
Silver	BDL	0.10	7/21/92

BDL = Below Detection Limit

ANALYSIS CERTIFIED BY M. Krasnyansky

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER: Ecology & Environment

GENERATOR:

SAMPLE ID: 553

DATE RECEIVED: 7/15/92

DATE REPORTED: 7/20/92

LABORATORY ID: 2512

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FUELS ANALYSIS

PARAMETER	METHOD	RESULT	DATE ANALYZED
% Moisture	ASTM D1037	14.5	7/20/91

ANALYSIS CERTIFIED BY: Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACTION DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	554 Clean Area Back Gate	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2513

TCLP METALS

EPA HAZ #	ELEMENT	RESULT mg/L	DETECTION LIMIT mg/L	REGULATORY LEVEL mg/L	DATE ANALYZED
D004	Arsenic	0.08	0.05	5.0	7/22/92
D005	Barium	0.39	0.05	100.0	7/20/92
D006	Cadmium	0.14	0.02	1.0	7/21/92
D007	Chromium	BDL	0.02	5.0	7/20/92
D008	Lead	3.30	0.05	5.0	7/20/92
D009	Mercury	BDL	0.02	0.2	7/21/92
D010	Selenium	BDL	1.0	1.0	7/23/92
D011	Silver	BDL	0.05	5.0	7/21/92

BDL = Below Detection Limit

EPA Method SW846 6010
Mercury Method SW846 7470
EPA SW846 1311

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACT DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	554 Clear Area Back Gate	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2513

TOTAL METALS
SW846 6010

Element	Result ~~ppm~~ mg/Kg 7.31.92 el	Detection Limit	Date Analyzed
Arsenic	55.0	0.10	7/22/92
Barium	5.1	0.10	7/20/92
Cadmium	44.8	0.05	7/21/92
Chromium	88.3	0.05	7/20/92
Lead	6020	0.10	7/20/92
Mercury	0.53	0.02	7/17/92
Selenium	BDL	5.0	7/23/92
Silver	BDL	0.10	7/21/92

BDL = Below Detection Limit

ANALYSIS CERTIFIED ~~BY~~ _____
Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER: Ecology & Environment

GENERATOR:

SAMPLE ID: 554

DATE RECEIVED: 7/15/92

DATE REPORTED: 7/20/92

LABORATORY ID: 2513

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FUELS ANALYSIS

PARAMETER	METHOD	RESULT	DATE ANALYZED
% Moisture	ASTM D1037	15.6	7/20/91

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACTION DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	555 Storage Area	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2514

TCLP METALS

EPA HAZ #	ELEMENT	RESULT mg/L	DETECTION LIMIT mg/L	REGULATORY LEVEL mg/L	DATE ANALYZED
D004	Arsenic	1.58	0.05	5.0	7/22/92
D005	Barium	0.35	0.05	100.0	7/20/92
D006	Cadmium	1.65	0.02	1.0	7/21/92
D007	Chromium	BDL	0.02	5.0	7/20/92
D008	Lead	959	0.05	5.0	7/20/92
D009	Mercury	BDL	0.02	0.2	7/21/92
D010	Selenium	BDL	1.0	1.0	7/23/92
D011	Silver	BDL	0.05	5.0	7/21/92

BDL = Below Detection Limit

EPA Method SW846 6010
Mercury Method SW846 7470
EPA SW846 1311

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACT DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	555 Storage Area	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2514

TOTAL METALS
SW846 6010

Element	Result	~~ppm~~ mg/kg	Detection Limit	Date Analyzed
Arsenic	110		0.10	7/22/92
Barium	52.0		0.10	7/20/92
Cadmium	113		0.05	7/21/92
Chromium	563		0.05	7/20/92
Lead	78340		0.10	7/20/92
Mercury	0.85		0.02	7/17/92
Selenium	BDL		5.0	7/23/92
Silver	BDL		0.10	7/21/92

BDL = Below Detection Limit

ANALYSIS CERTIFIED BY _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER: Ecology & Environment

GENERATOR:

SAMPLE ID: 555

DATE RECEIVED: 7/15/92

DATE REPORTED: 7/20/92

LABORATORY ID: 2514

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FUELS ANALYSIS

PARAMETER	METHOD	RESULT	DATE ANALYZED
% Moisture	ASTM D1037	36.3	7/20/91

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACTION DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	556 RR Grade	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2515

TCLP METALS

EPA HAZ #	ELEMENT	RESULT mg/L	DETECTION LIMIT mg/L	REGULATORY LEVEL mg/L	DATE ANALYZED
D004	Arsenic	8.10	0.05	5.0	7/22/92
D005	Barium	0.67	0.05	100.0	7/20/92
D006	Cadmium	8.14	0.02	1.0	7/21/92
D007	Chromium	BDL	0.02	5.0	7/20/92
D008	Lead	1060	0.05	5.0	7/20/92
D009	Mercury	BDL	0.02	0.2	7/21/92
D010	Selenium	BDL	1.0	1.0	7/23/92
D011	Silver	BDL	0.05	5.0	7/21/92

BDL = Below Detection Limit

EPA Method SW846 6010
Mercury Method SW846 7470
EPA SW846 1311

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACT DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	556 RR Grade	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2515

TOTAL METALS
SW846 6010

Element	Result ppm mg/kg 7.31.92	Detection Limit	Date Analyzed
Arsenic	487.0	0.10	7/22/92
Barium	194	0.10	7/20/92
Cadmium	530	0.05	7/21/92
Chromium	980	0.05	7/20/92
Lead	94000	0.10	7/20/92
Mercury	3.19	0.02	7/17/92
Selenium	BDL	5.0	7/23/92
Silver	BDL	0.10	7/21/92

BDL = Below Detection Limit

ANALYSIS CERTIFIED BY _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER: Ecology & Environment

GENERATOR:

SAMPLE ID: 556

DATE RECEIVED: 7/15/92

DATE REPORTED: 7/20/92

LABORATORY ID: 2515

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FUELS ANALYSIS

PARAMETER	METHOD	RESULT	DATE ANALYZED
% Moisture	ASTM D1037	18.4	7/20/91

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACTION DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	557 Clean Area NW	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2516

TCLP METALS

EPA HAZ #	ELEMENT	RESULT mg/L	DETECTION LIMIT mg/L	REGULATORY LEVEL mg/L	DATE ANALYZED
D004	Arsenic	0.23	0.05	5.0	7/22/92
D005	Barium	BDL	0.05	100.0	7/20/92
D006	Cadmium	0.26	0.02	1.0	7/21/92
D007	Chromium	BDL	0.02	5.0	7/20/92
D008	Lead	1260	0.05	5.0	7/20/92
D009	Mercury	BDL	0.02	0.2	7/21/92
D010	Selenium	BDL	1.0	1.0	7/23/92
D011	Silver	BDL	0.05	5.0	7/21/92

BDL = Below Detection Limit

EPA Method SW846 6010
Mercury Method SW846 7470
EPA SW846 1311

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACT DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	557 Clear Area NW	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2516

TOTAL METALS
SW846 6010

Element	Result	~~ppm~~ mg/kg x 1.31.92	Detection Limit	Date Analyzed
Arsenic	92.0		0.10	7/22/92
Barium	32.0		0.10	7/20/92
Cadmium	47.2		0.05	7/21/92
Chromium	17.0		0.05	7/20/92
Lead	107000		0.10	7/20/92
Mercury	2.03		0.02	7/17/92
Selenium	BDL		5.0	7/23/92
Silver	BDL		0.10	7/21/92

BDL = Below Detection Limit

ANALYSIS CERTIFIED BY _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER: Ecology & Environment

GENERATOR:

SAMPLE ID: 557

DATE RECEIVED: 7/15/92

DATE REPORTED: 7/20/92

LABORATORY ID: 2516

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FUELS ANALYSIS

PARAMETER	METHOD	RESULT	DATE ANALYZED
% Moisture	ASTM D1037	17.4	7/20/91

ANALYSIS CERTIFIED ~~BY~~:

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACTION DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	558 Outside Front Gate	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2517

TCLP METALS

EPA HAZ #	ELEMENT	RESULT mg/L	DETECTION LIMIT mg/L	REGULATORY LEVEL mg/L	DATE ANALYZED
D004	Arsenic	0.49	0.05	5.0	7/22/92
D005	Barium	0.72	0.05	100.0	7/20/92
D006	Cadmium	0.49	0.02	1.0	7/21/92
D007	Chromium	BDL	0.02	5.0	7/20/92
D008	Lead	6.26	0.05	5.0	7/20/92
D009	Mercury	BDL	0.02	0.2	7/21/92
D010	Selenium	BDL	1.0	1.0	7/23/92
D011	Silver	BDL	0.05	5.0	7/21/92

BDL = Below Detection Limit

EPA Method SW846 6010
Mercury Method SW846 7470
EPA SW846 1311

ANALYSIS CERTIFIED BY: Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACT DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	558 Outside Front Gate	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2517

TOTAL METALS
SW846 6010

Element	Result ~~ppm~~ mg/Kg 7.13.92 el	Detection Limit	Date Analyzed
Arsenic	68.0	0.10	7/22/92
Barium	500	0.10	7/20/92
Cadmium	92.5	0.05	7/21/92
Chromium	310	0.05	7/20/92
Lead	24000	0.10	7/20/92
Mercury	0.86	0.02	7/17/92
Selenium	BDL	5.0	7/23/92
Silver	BDL	0.10	7/21/92

BDL = Below Detection Limit

ANALYSIS CERTIFIED BY ______________________
Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER: Ecology & Environment

GENERATOR:

SAMPLE ID: 558

DATE RECEIVED: 7/15/92

DATE REPORTED: 7/20/92

LABORATORY ID: 2517

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FUELS ANALYSIS

PARAMETER	METHOD	RESULT	DATE ANALYZED
% Moisture	ASTM D1037	9.6	7/20/91

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACTION DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	559 West Side Fence by RR	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2518

TCLP METALS

EPA HAZ #	ELEMENT	RESULT mg/L	DETECTION LIMIT mg/L	REGULATORY LEVEL mg/L	DATE ANALYZED
D004	Arsenic	0.93	0.05	5.0	7/22/92
D005	Barium	0.33	0.05	100.0	7/20/92
D006	Cadmium	0.49	0.02	1.0	7/21/92
D007	Chromium	BDL	0.02	5.0	7/20/92
D008	Lead	494	0.05	5.0	7/20/92
D009	Mercury	BDL	0.02	0.2	7/21/92
D010	Selenium	BDL	1.0	1.0	7/23/92
D011	Silver	BDL	0.05	5.0	7/21/92

BDL = Below Detection Limit

EPA Method SW846 6010
Mercury Method SW846 7470
EPA SW846 1311

ANALYSIS CERTIFIED BY: 

Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACT DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	559 West Side Fence-RR	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2518

TOTAL METALS
SW846 6010

Element	Result	~~ppm~~ mg/Kg 7.31.92	Detection Limit	Date Analyzed
Arsenic	53.0		0.10	7/22/92
Barium	150		0.10	7/20/92
Cadmium	52.5		0.05	7/21/92
Chromium	BDL		0.05	7/20/92
Lead	24200		0.10	7/20/92
Mercury	0.47		0.02	7/17/92
Selenium	BDL		5.0	7/23/92
Silver	BDL		0.10	7/21/92

BDL = Below Detection Limit

ANALYSIS CERTIFIED BY _____

Michael Krasnyansky, Ph.D
Laboratory Director

American Environmental Laboratories, Inc.

CUSTOMER: Ecology & Environment

GENERATOR:

SAMPLE ID: 559

DATE RECEIVED: 7/15/92

DATE REPORTED: 7/20/92

LABORATORY ID: 2518

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FUELS ANALYSIS

PARAMETER	METHOD	RESULT	DATE ANALYZED
% Moisture	ASTM D1037	18.3	7/20/91

ANALYSIS CERTIFIED BY: _____

Michael Krasnyansky, Ph.D
Laboratory Director

American Environmental Laboratories, Inc.

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACTION DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	5510 Sewer Outside Back Gate	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2519

TCLP METALS

EPA HAZ #	ELEMENT	RESULT mg/L	DETECTION LIMIT mg/L	REGULATORY LEVEL mg/L	DATE ANALYZED
D004	Arsenic	2.16	0.05	5.0	7/22/92
D005	Barium	0.59	0.05	100.0	7/20/92
D006	Cadmium	1.12	0.02	1.0	7/21/92
D007	Chromium	BDL	0.02	5.0	7/20/92
D008	Lead	757	0.05	5.0	7/20/92
D009	Mercury	BDL	0.02	0.2	7/21/92
D010	Selenium	BDL	1.0	1.0	7/23/92
D011	Silver	BDL	0.05	5.0	7/21/92

BDL = Below Detection Limit

EPA Method SW846 6010
Mercury Method SW846 7470
EPA SW846 1311

ANALYSIS CERTIFIED BY: Michael Krasnyansky, Ph.D
Laboratory Director

CUSTOMER:	Ecology & Environment	DATE RECEIVED:	7/15/92
EXTRACT DATE:	7/16/92	DATE SAMPLED:	7/14/92
SAMPLE ID:	5510 Sewer Outside Bk Gate	DATE REPORTED:	7/27/92
MATRIX:	Soil	LABORATORY ID:	2519

TOTAL METALS
SW846 6010

Element	Result ppm mg/kg 7.31.92	Detection Limit	Date Analyzed
Arsenic	90.0	0.10	7/22/92
Barium	160	0.10	7/20/92
Cadmium	88.0	0.05	7/21/92
Chromium	667	0.05	7/20/92
Lead	43100	0.10	7/20/92
Mercury	0.94	0.02	7/17/92
Selenium	BDL	5.0	7/23/92
Silver	BDL	0.10	7/21/92

BDL = Below Detection Limit

ANALYSIS CERTIFIED BY

Michael Krasnyansky, Ph.D
Laboratory Director

American Environmental Laboratories, Inc.

CUSTOMER: Ecology & Environment

GENERATOR:

SAMPLE ID: 5510

DATE RECEIVED: 7/15/92

DATE REPORTED: 7/20/92

LABORATORY ID: 2519

==========

FUELS ANALYSIS

PARAMETER	METHOD	RESULT	DATE ANALYZED
% Moisture	ASTM D1037	19.3	7/20/91

ANALYSIS CERTIFIED BY: A. Krasnyansky

Michael Krasnyansky, Ph.D.
Laboratory Director

[illegible]

[illegible] South [illegible]arborn Street
Chicago, Illinois 60604

[illegible]AIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
ET 1054	9107-201 TCS-1206-022

SAMPLERS: *(Signature)* S. L. [illegible] [illegible]

STA. NO.	DATE	TIME	COMP-	GRAB	STATION LOCATION	NO. OF CONTAINERS	[illegible]	[illegible]	[illegible]				REMARKS
SS1	7.14	1100		X	trench drain [illegible]	[illegible]	X	X	X				
SS2	7.14	1110		X	trench drain [illegible]		X	X					
SS3	7.14	1415		X	in front of [illegible]		X	X					MS/MSD
SS4	7.14	1430		X	clear area - back gate		X	X					
SS5	7.14	1445		X	storage area puddle		X	X					
SS6	7.14	1500		X	[illegible] gate		X	X					
SS7	7.14	1515		X	clear area NW		X	X					Report results to:
SS8	7.14	1530		X	outside front gate		X	X					[illegible]
SS9	7.14	1545		X	west side of fence by RR		X	X					[illegible] Environmental
S10	7.14	1600		X	[illegible] gate	[illegible]	X	X					
													[illegible]
					no other samples								[illegible]
													[illegible]
					All [illegible]								[illegible]

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
[illegible]	[illegible]-92 [illegible]	[illegible]			
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*

Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks
		[illegible]	7/15/92 [illegible]	To: [illegible] 33 Industry [illegible] [illegible]

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

[illegible]

APPENDIX D

PARTIAL SAMPLING RESULTS FROM CTI

RESULTS OF CHEMICAL ANALYSIS FOR BORING SAMPLES

REPORTED BY CTI, JANUARY 21, 1991

WORK ORDER NUMBER:114
CUSTOMER NUMBER:B27 1'
TEST REQUESTED: Total RCRA Metals

Element	Result mg/Kg	Detection mg/Kg	Method
Arsenic	<0.50	0.50	6010
Selenium	<0.50	0.50	6010
Mercury	<0.01	0.01	245.1
Lead	14070.0	0.50	6010
Cadmium	3.4	0.25	6010
Nickel	34.0	0.50	6010
Barium	38.0	0.50	6010
Chromium	57.0	0.50	6010
Silver	<0.02	0.02	6010

Groundwater Monitoring Results (mg/l)
Master Metals, Inc.
February 1991

Containment	MW 175	MW 176	MW 177	MW 178	Standard (a)
Lead	0.45	0.80	1.35	0.69	0.05
Cadmium	0.026	0.074	0.087	0.03	0.01
Nickel	0.27	0.04	0.08	0.52	N/A (b)
Barium	0.05	0.02	0.04	0.04	1.0
Chromium	0.02	0.02	0.10	1.33	0.05
pH	9.86	9.15	7.44	6.80	

a/ Ohio - Maximum contaminant levels for inorganic chemicals in drinking water
b/ Not assigned

RESULTS OF CHEMICAL ANALYSIS FOR BORING SAMPLES

REPORTED BY CTI, JANUARY 21, 1991

WORK ORDER NUMBER:086
CUSTOMER NUMBER:210 8-10
TEST REQUESTED: Total RCRA Metals

Element	Result mg/Kg	Detection mg/Kg	Method
Arsenic	<0.50	0.50	6010
Selenium	<0.50	0.50	6010
Mercury	<0.01	0.01	245.1
Lead	11225	0.50	6010
Cadmium	25.0	0.25	6010
Nickel	170.0	0.50	6010
Barium	72.5	0.50	6010
Chromium	<0.5	0.50	6010
Silver	<0.02	0.02	6010

RESULTS OF CHEMICAL ANALYSIS FOR BORING SAMPLES

REPORTED BY CTI, JANUARY 21, 1991

WORK ORDER NUMBER:089
CUSTOMER NUMBER:B11 3-5
TEST REQUESTED: Total RCRA Metals

Element	Result mg/Kg	Detection mg/Kg	Method
Arsenic	<0.50	0.50	6010
Selenium	<0.50	0.50	6010
Mercury	<0.01	0.01	245.1
Lead	11175	0.50	6010
Cadmium	14.0	0.25	6010
Nickel	40.0	0.50	6010
Barium	50.2	0.50	6010
Chromium	3.3	0.50	6010
Silver	<0.02	0.02	6010

APPENDIX E

REGION V AIR AND RADIATION DIVISION

ISSUE PAPER

REGION 5
AIR AND RADIATION DIVISION
ISSUE PAPER

ENFORCEMENT SENSITIVE

Date: June 30, 1992

Issue/Topic

Ambient Lead Monitor Readings at Master Metals, Inc., Cleveland, Ohio

Background/Current Status

In January, 1992, three ambient lead monitors were installed near the Master Metals secondary lead smelting facility at 2850 West Third Street, Cleveland, Ohio. One monitor was installed a few meters outside plant property and other two were collocated on the roof of a tire company about 0.5 kilometers to the northeast of Master Metals. They were installed to determine ambient levels of lead to compare to the National Ambient Air Quality Standard (NAAQS) for lead of 1.5 micrograms of lead per cubic meter ($\mu g/m^3$) for a calendar quarter average.

The monitors are Hi-Vol type which, every 6th day, take in ambient air through a filter over a 24-hour period. This filter is then chemically analyzed for lead content. The following values for monthly averages were obtained since the fence-line monitor first operated on January 25, 1992. The number in parentheses is the number of days during the month that the monitor operated.

Month	Lead Concentration ($\mu g/m^3$)
January (2)	1.54
February (4)	39.01
March (6)	13.27
April (5)	3.58
May (5)	3.99

Using the January, February, and March concentrations, a simple quarterly average of 18 $\mu g/m^3$ can be calculated. This concentration is well above the NAAQS value of 1.5 $\mu g/m^3$.

A review of regulations applicable to this facility, for possible enforcement action, is underway. The Ohio SIP does not contain any lead emission limits, only the ambient standard. The SIP limits for particulate matter (PM) provide some control for lead emissions. Under the revised PM SIP recently submitted for Cuyahoga County, no additional particulate emission control would be required at Master Metals. An inspection is planned to gather operating information, from Master Metals, to determine if the above readings could be anomalies caused by unusual circumstances, such as malfunctions. We are also investigating whether the monitored values could potentially reflect lead emissions from sources other than Master Metals.

Attached is a copy of a June 12, 1992 article from the Plain Dealer newspaper, reporting on the City of Cleveland's attempt to shut down the lead-smelting furnaces at Master Metals, Inc. Recent discussions with Ed Fasko of the

Cleveland Department of Air Pollution Control (CDAPC) revealed that the company has not been shut down. The Ohio Environmental Protection Agency has contacted CDAPC and is considering whether or not to take action.

Recommendations

We will continue to investigate the compliance and monitoring aspects of this issue. The monitoring information available thus far has not been officially converted to a quarterly average through the Aerometric Information Retrieval System, however, all indications are that the data represents a violation of the NAAQS. Therefore, we are initiating appropriate actions toward redesignation.

Contact

John Gaitskill at 6-6795 or Randy Robinson at 3-6713

Attachment

APPENDIX F

ANALYTICAL DATA REVIEW

ecology and environment, inc.
6777 ENGLE ROAD, CLEVELAND, OHIO 44130, TEL. (216) 243-3330
International Specialists in the Environment

MEMORANDUM

DATE: August 7, 1992

TO: Sandra L. Basham, Project Manager, E & E, Cleveland, OH SLB

FROM: Emily S. Landis, TAT-Geochemist, E & E, Cleveland, OH esl

THRU: Anne A. Busher, TATL, E & E, Cleveland, OH AAB

SUBJ: **Inorganic Metals Data Quality Assurance Review, Master Metals Site, Cleveland, Cuyahoga County, OH.**

REF: Analytical TDD: T059207801 Project TDD: T059206022
Analytical PAN: EOH0969AAA Project PAN: EOH0969SAA

The data quality assurance review of 10 soil samples taken from the Master Metals site on July 14, 1992 is now complete. Metals analyses (EPA Methods 6010 and 7470) and Toxic Characteristic Leaching Procedure (TCLP, EPA Method 1311) were performed by American Environmental Laboratories of Bedford, Ohio. The laboratory also tested the pH of one sample, following EPA Method 9045.

The samples were numbered SS1 through SS10 (551-5510 on lab report), corresponding to the laboratory's numbers 2510 through 2519, respectively.

Data Qualifications:

I Holding Time: Acceptable.

The samples were received by the laboratory on July 15, 1992. TCLP extraction was done July 16, 1992. Total RCRA metals and TCLP metals analyses were performed July 17-22, 1992. Sample SS1 was tested for pH on July 20, 1992.

II Initial & Continuing Calibrations: Data Incomplete.

Inductively Coupled Plasma (ICP) - A blank and 2 standards were run prior to sample analysis on the ICP. Data for silver and mercury calibrations are not available.

III ICP Interference Check Standards: Acceptable.

The interference check standard for the ICP method was within the accepted range of 80-120 percent recovery (%R).

IV Method Blanks: Data Incomplete.

A method blank was run for both total metals and TCLP metals. The results for all were below the instrument detection limit (IDL). Data for mercury analysis is not available.

VII ICP Serial Dilutions: Data Not Available.

Overall Assessment of Data for Use:

The overall usefulness of the data is based on the criteria outlined in OSWER Directive 9360.4-01 (1990). With the information provided by the laboratory, these analytical results are considered acceptable for use as reported.